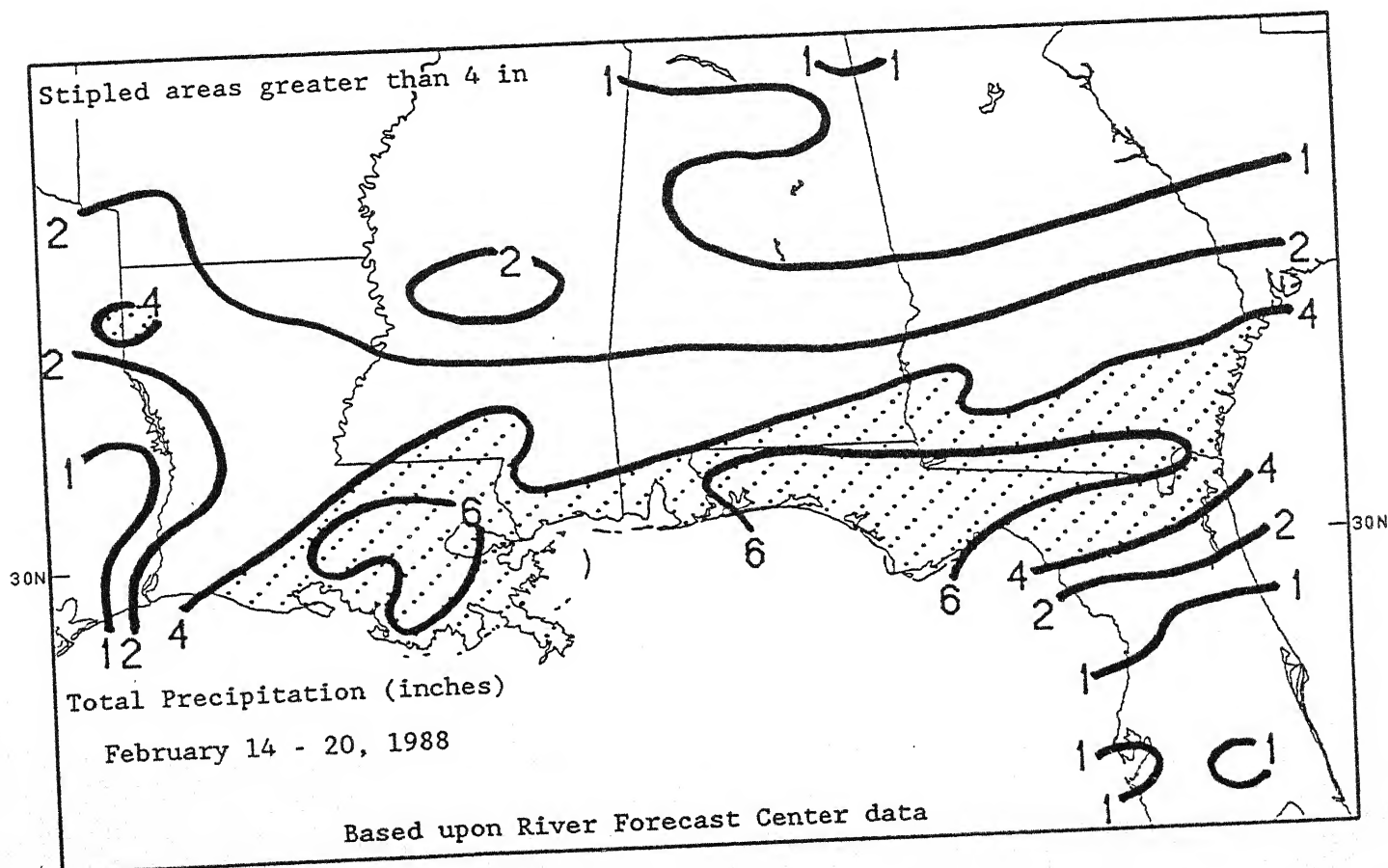


# WEEKLY CLIMATE BULLETIN

No. 88/08

Washington, DC

February 20, 1988



TORRENTIAL RAINS INUNDATED PORTIONS OF THE GULF COAST REGION.

NOAA - NATIONAL WEATHER SERVICE - NATIONAL METEOROLOGICAL CENTER

## WEEKLY CLIMATE BULLETIN

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This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- Highlights of major global climatic events and anomalies.
- U.S. climatic conditions for the previous week.
- U.S. apparent temperatures (summer) or wind chill (winter).
- Global two-week temperature anomalies.
- Global four-week precipitation anomalies.
- Global monthly temperature and precipitation anomalies.
- Global three-month precipitation anomalies (once a month).
- Global twelve-month precipitation anomalies (every 3 months).
- Global temperature anomalies for winter and summer seasons.
- Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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# GLOBAL HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF FEBRUARY 20, 1988  
(Approximate duration of anomalies is in brackets.)

1. CANADA AND UNITED STATES: TEMPERATURES MODERATE.

Near normal temperatures prevailed last week in contrast to the previously bitterly cold conditions in Canada and the north central United States [Ended at 3 weeks].

2. EUROPE AND NORTH AFRICA: WARM CONDITIONS DIMINISH.

Temperatures were generally less than  $5.3^{\circ}$  ( $9.5^{\circ}\text{F}$ ) above normal in Europe as unusually mild conditions diminished last week [Ending at 7 weeks].

3. EASTERN SOUTH AFRICA: AREA REMAINS UNUSUALLY DRY.

Little or no precipitation, less than 19 mm (0.75 inch), fell in the area last week. Dryness persisted as near normal temperatures returned [7 weeks].

4. BOTSWANA AND ZIMBABWE: HEAVY PRECIPITATION OCCURS.

Unusually heavy precipitation fell in southern Botswana and western Zimbabwe with as much as 420 mm (16.54 inches) reported in the last ten days (see Special Summary) [Episodal Event].

5. BOLIVIA AND PARAGUAY: DRY CONDITIONS CONTINUE.

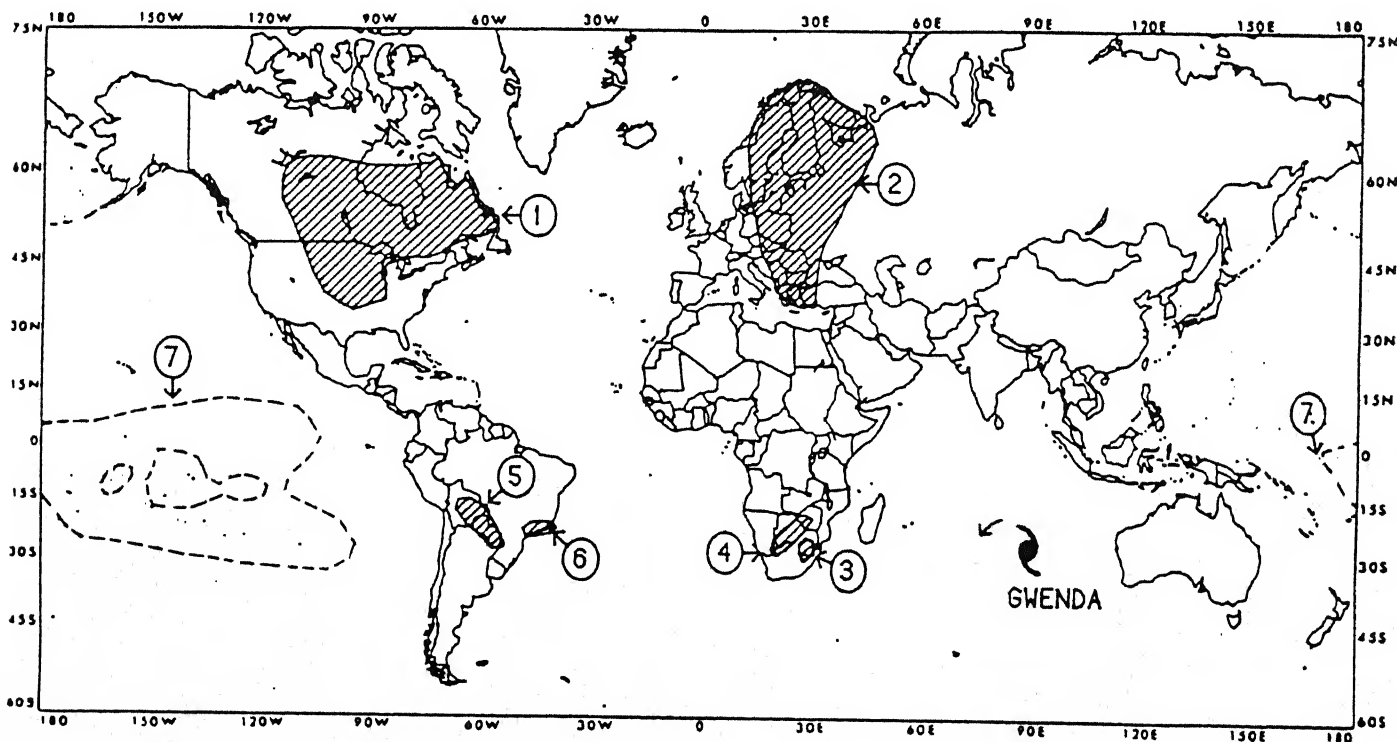
Unusually dry conditions persist in Bolivia and Paraguay as light precipitation, up to 20 mm (0.79 inch), was reported last week [9 weeks].

6. BRAZIL: HEAVY RAINS AROUND RIO DE JANEIRO.

Heavy precipitation last week, with amounts as high as 165.8 mm (6.53 inches), occurred in the vicinity of Rio de Janeiro where wetness has developed (see Special Summary) [3 weeks].

7. CENTRAL AND EASTERN TROPICAL PACIFIC: REFER TO JANUARY 1988 ON EL NINO/SOUTHERN OSCILLATION (ENSO) ADVISORY.

The sea surface temperatures remained  $1^{\circ}\text{C}$  ( $1.8^{\circ}\text{F}$ ) to  $2^{\circ}\text{C}$  ( $3.6^{\circ}\text{F}$ ) above normal through January. The area above  $1^{\circ}\text{C}$  ( $1.8^{\circ}\text{F}$ ) is outlined for January 1988. The February 1988 ENSO Summary will appear in the middle of March.



Approximate locations of the major anomalies and events described above are shown on this map. See the other world maps in this Bulletin for current two-week temperature anomalies, four-week precipitation anomalies, and (occasionally) longer-term anomalies.

# U.S. WEEKLY WEATHER HIGHLIGHTS

FOR THE WEEK ENDING MIDNIGHT FEBRUARY 20, 1988

Heavy thunderstorms inundated much of the Gulf Coast region last week (see front cover). According to the River Forecast Center data, largest state totals ranged from 4.9 inches in southeastern Alabama, 5.4 inches in southeastern Mississippi, 7.5 inches in southeastern Georgia, 7.7 inches in northwestern Florida, and up to 8.0 inches in southeastern Louisiana (see Table 1). Some coastal locations in the Pacific Northwest and along the Atlantic Ocean and Gulf of Alaska also received heavy precipitation. Light to moderate amounts were recorded in the Pacific Northwest interior, in portions of the northern and southern Great Plains, and throughout most of the nation east of the Mississippi River. Little or no precipitation fell in the Southwest and Great Basin, the Rocky Mountain regions, southern Texas, the central Great Plains, the upper Midwest, and southern Florida.

Last week's temperatures moderated across much of the eastern U.S. as warmer weather replaced the bitterly cold Arctic air that dominated this area the previous two weeks. Departures between 10-17°F above normal were common in Montana and North Dakota (see Table 2). Temperatures averaged slightly above normal along much of the Pacific coast and in the Great Plains, Midwest, mid-Atlantic, and New England regions. Below normal departures occurred in parts of California, throughout the central and southern Rockies, and in most of the Southeast. The western half of Alaska experienced frigid conditions as departures were as much as 16°F below normal. In contrast, southeastern Alaska remained relatively mild with departures up to 13°F above normal.

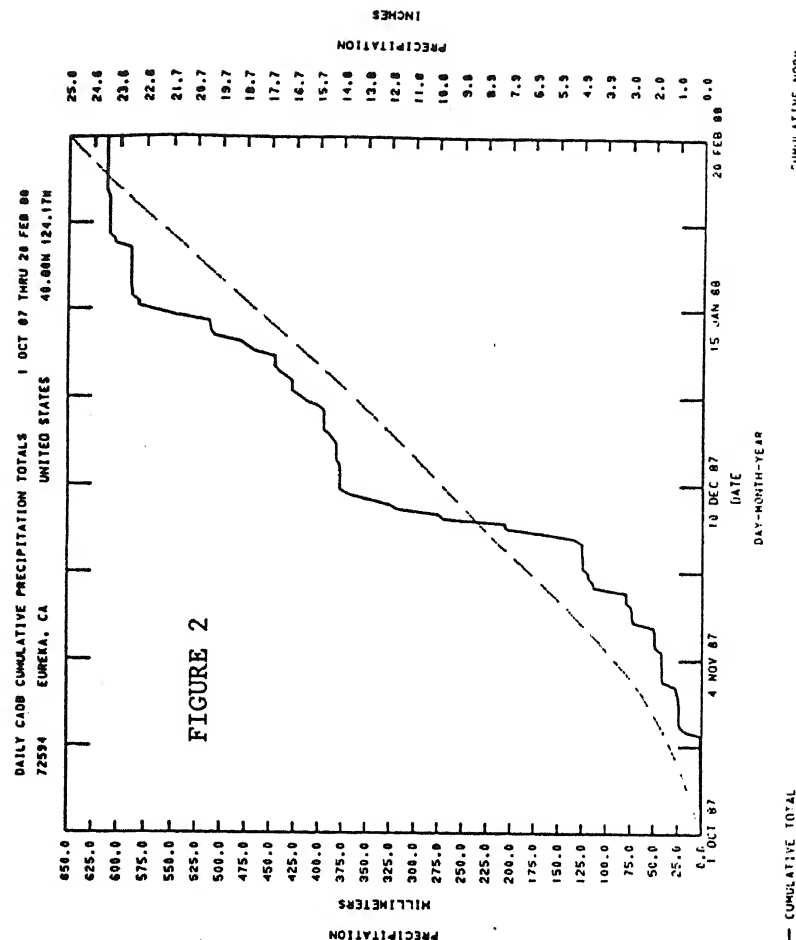
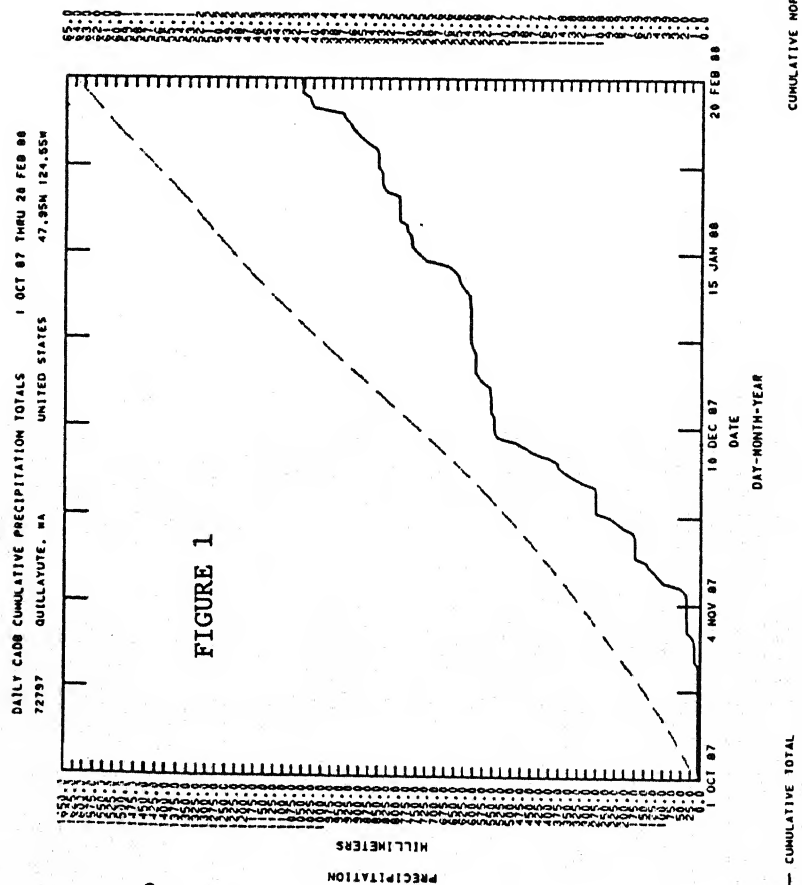
TABLE 1. Selected cities with more than three and one half inches of precipitation for the week.

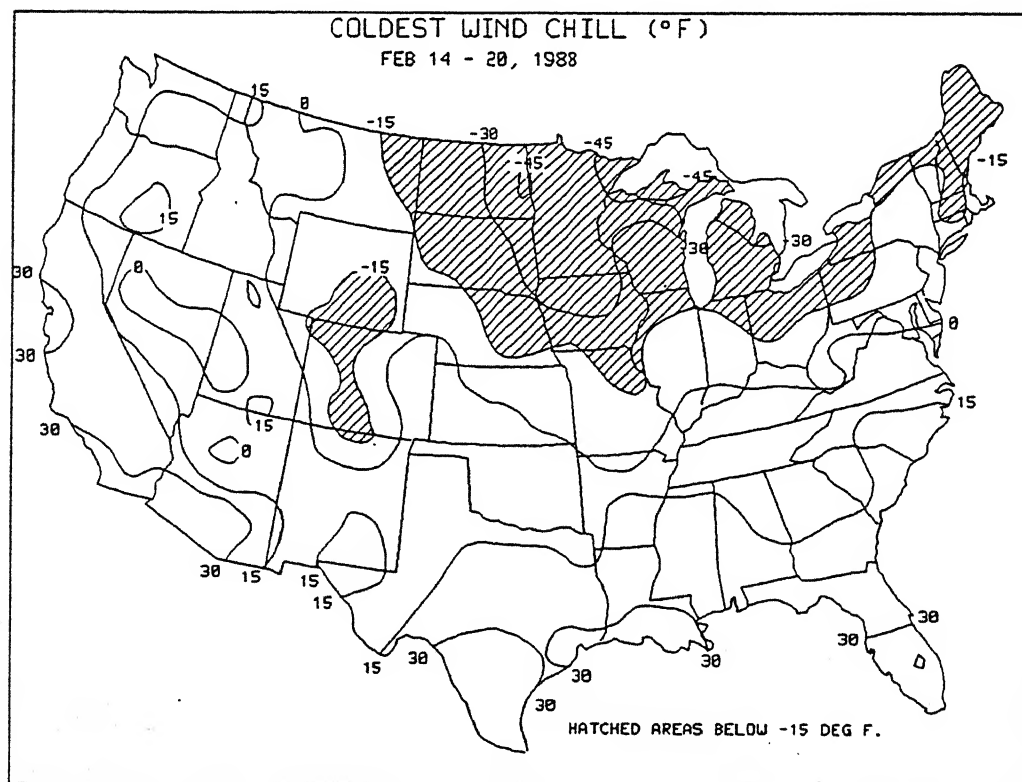
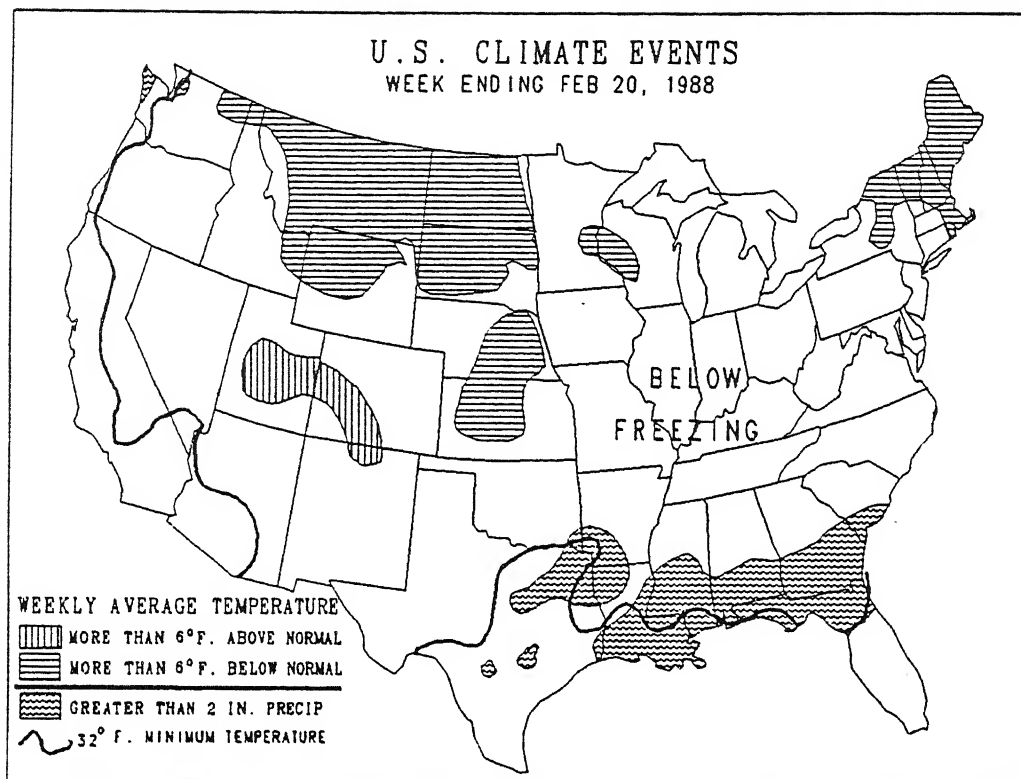
Pensacola, FL (PNS)	7.59	Jacksonville, FL (JAX)	4.97
Yakutat, AK	7.31	Valdez, AK	4.96
Valparaiso, FL	7.07	Lafayette, LA	4.92
Tallahassee, FL	6.62	McComb, MS	4.49
Valdosta, GA (VLD)	6.61	Mobile, AL	4.41
Brunswick, GA	6.41	Quillayute, WA	4.34
Milton, FL	6.39	Cordova, AK	4.12
Apalachicola, FL	6.23	New Orleans, LA (NEW)	4.02
New Orleans, LA (MSY)	5.75	Savannah, GA (SAV)	3.73
Biloxi/Keesler AFB, MS	5.42	Dothan, AL	3.72
Panama City, FL	5.33	Valdosta, GA (VAD)	3.69
Baton Rouge, LA	5.23	Savannah, GA (SVN)	3.58
Pensacola, FL (NPA)	5.03		

TABLE 2. Selected cities with temperatures averaging higher than 9°F above or lower than 7°F below normal for the week.

Havre, MT	+17	Great Falls, MT	+10
Glasgow, MT	+15	Helena, MT	+10
Gulkana, AK	+13		
Miles City, MT	+13	Nome, AK	-16
Dickinson, ND	+12	Bethel, AK	-14
Williston, ND	+12	Unalakleet, AK	-14
Cut Bank, MT	+11	Aniak, AK	-13
Minot, ND	+11	Wainwright, AK	-12
Burlington, VT	+11	Kotzebue, AK	-11
Juneau, AK	+10	St. Paul Island, AK	-9
Houlton, ME	+10	Alamosa, CO	-9
Rumford, ME	+10	Grand Junction, CO	-8
Massena, NY	+10		

Precipitation amounts for the 1987-1988 rainy season (since Oct. 1, 1987) continue to be below normal throughout much of the Pacific Northwest. Overall, many locations in the area have averaged between 50-75% of normal. After a slow start, heavy precipitation fell during most of December and early January, especially in northern California and Oregon. However, precipitation has diminished since mid-January and most locations have recently received only light amounts. A few exceptions to the deficient seasonal precipitation pattern are located around the coasts of southern Oregon and northern California. The excessive December and early January precipitation has greatly contributed to a near normal season. Stations that typify below or near normal seasonal precipitation are represented by Quillayute, WA (Figure 1) and Eureka, CA (Figure 2), respectively.

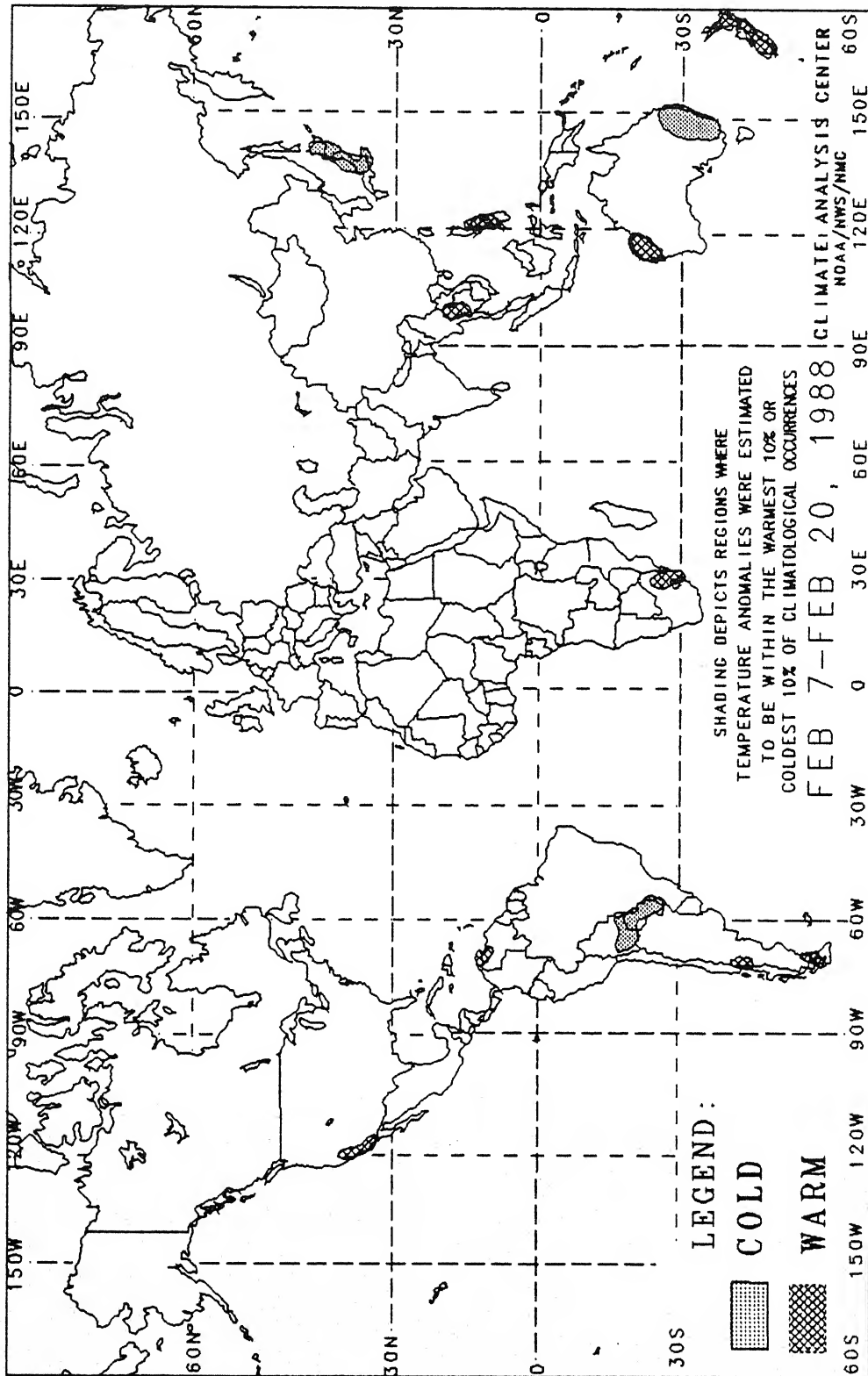




Moderating temperatures resulted in less severe wind chills across most of the United States. Wind chills below  $-45^{\circ}\text{F}$  were limited to eastern North Dakota, northeastern Minnesota, northern Wisconsin, and northwestern Upper Michigan.

# GLOBAL TEMPERATURE ANOMALIES

2 Week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

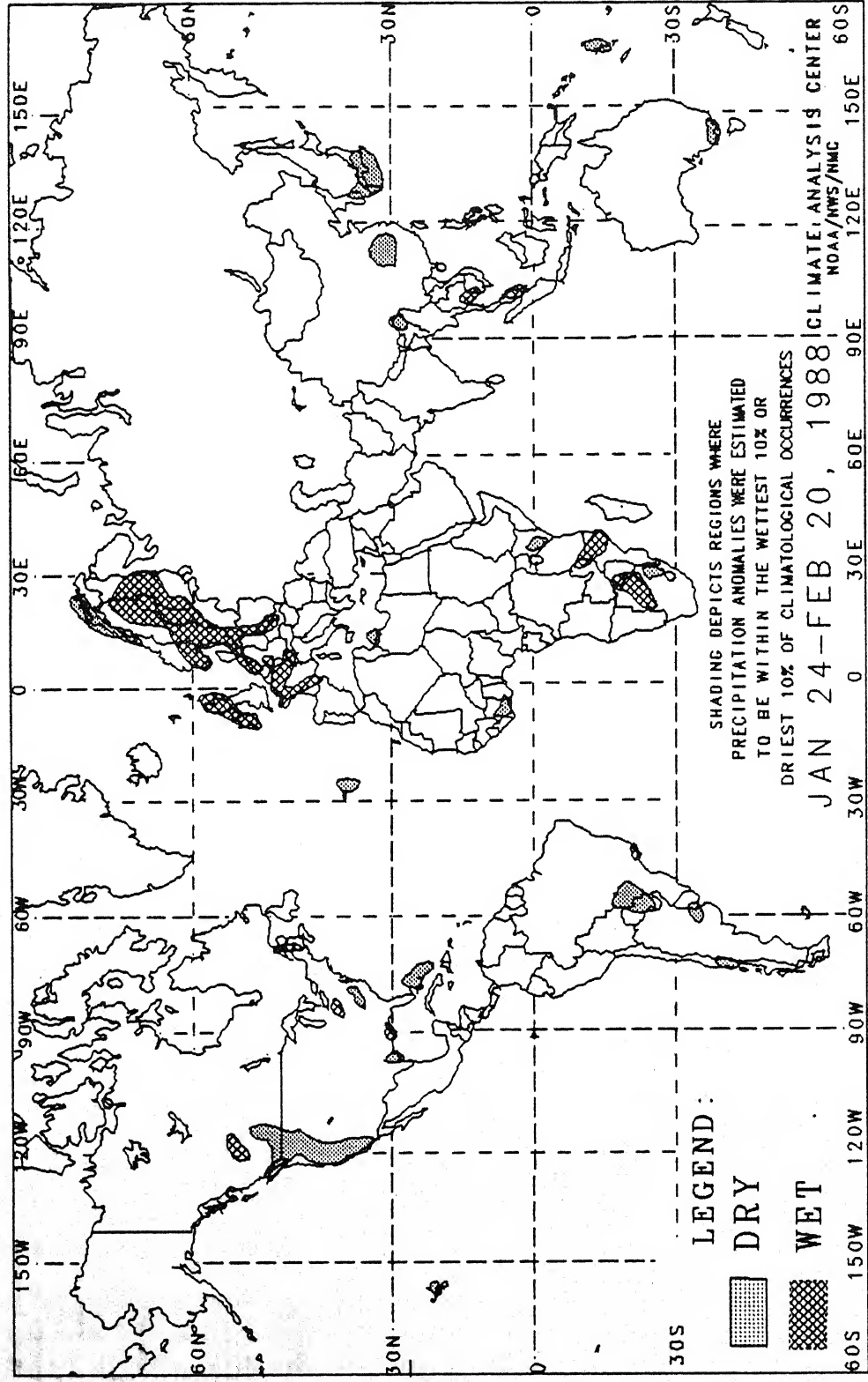
In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.



# GLOBAL PRECIPITATION ANOMALIES

4 Week



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

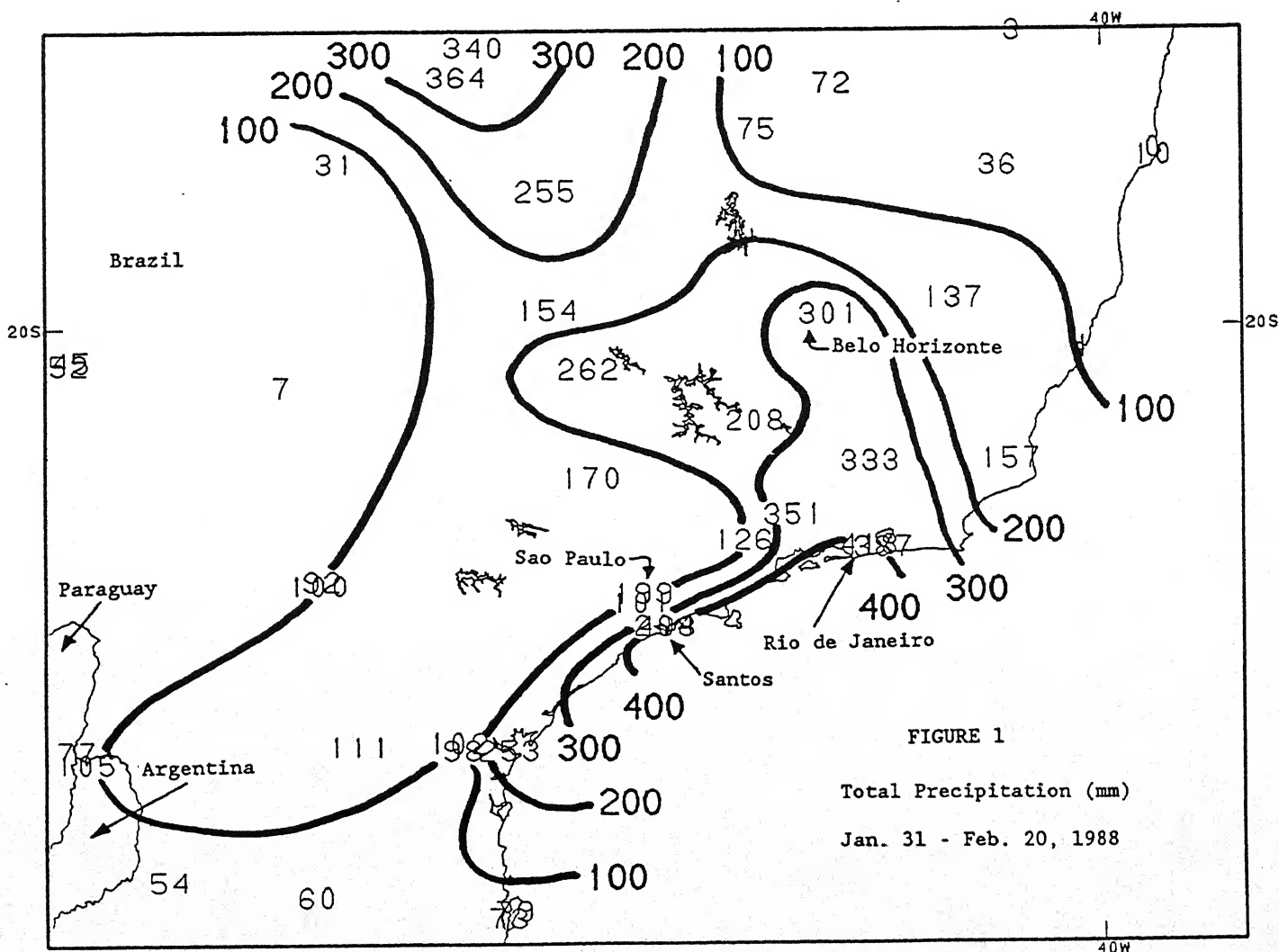


# SPECIAL CLIMATE SUMMARY

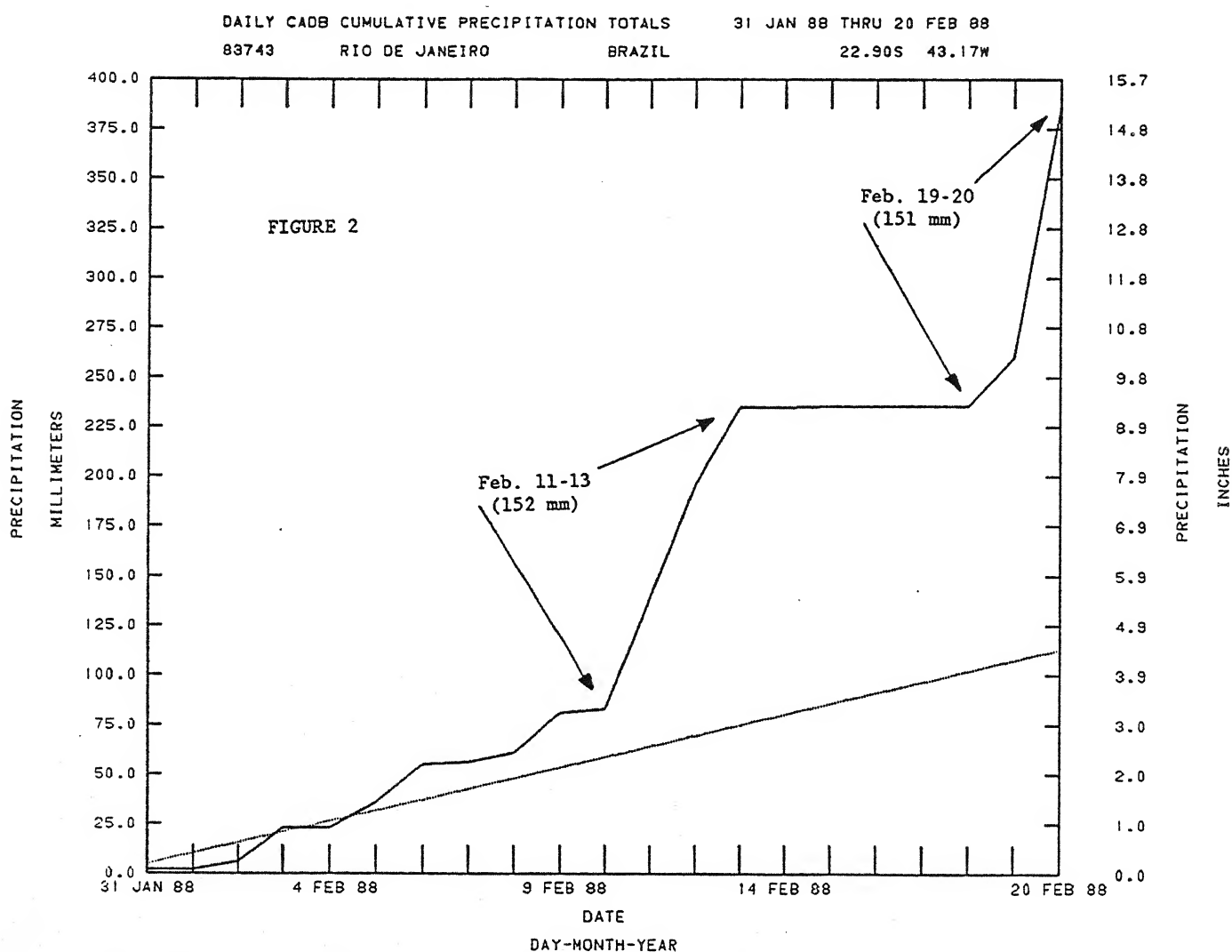
Climate Analysis Center, NMC  
National Weather Service, NOAA

## RIO DE JANEIRO AREA AFFLICTED BY SEVERE FLOODS AND MUDSLIDES.

Much of the coastal and mountainous regions near Rio de Janeiro have been inundated with torrential rainfall in February. The floods and mudslides were most likely enhanced by saturated soils from previously heavy rains. According to press reports, many lives were lost and property damage was severe. Over 300 mm (11.8 in) have been measured in many locations since Jan. 31, with amounts as high as 498.3 mm (19.6 in) at Santos, just south of Sao Paulo (see Figure 1).



In addition, the distribution of rainfall has been rather uneven as depicted in Figure 2. The majority of Rio de Janeiro's February precipitation occurred during Feb. 11-13 and Feb. 19-20. The first episode dropped 152 mm (5.98 in), while over 151 mm (5.94 in) fell during the latter dates. During the second occurrence, 127 mm (5.00 in) was measured on Feb. 20 alone, the majority of which fell during a four-hour downpour.

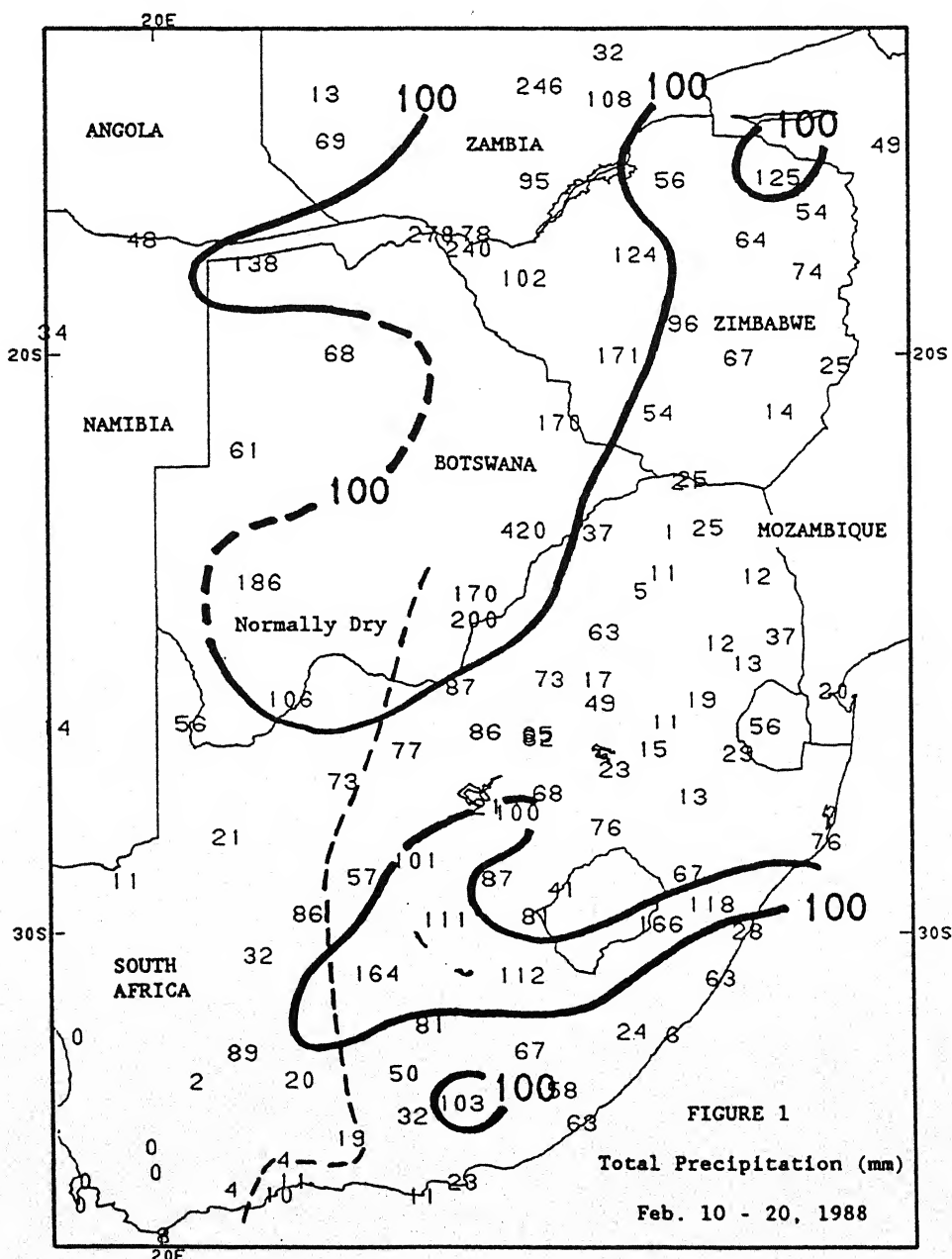


# SPECIAL CLIMATE SUMMARY

Climate Analysis Center, NMC  
National Weather Service, NOAA

UNUSUALLY WET WEATHER COVERS CENTRAL SOUTH  
AFRICA, SOUTHERN BOTSWANA, AND WESTERN ZIMBABWE.

Since February 10, rainfall has dramatically increased across central South Africa, southern Botswana, and western Zimbabwe. Heaviest amounts were concentrated in the normally arid region of southern Botswana, where Gaberones measured 200 mm (7.86 in) and Mahalapye recorded 420 mm (16.54 in). These eleven day totals represent over 37% and 83% of their normal ANNUAL amount, respectively. Even the southwestern Botswana town of Tshane, located in the Kalahari Desert, reported 186 mm (7.32 in). Precipitation values over 100 mm (3.94 in) were common throughout much of southern Africa (see Figure 1).



As depicted in Figure 2, the percent of normal precipitation during the same time period was well above normal for much of the area. Except for the normally arid regions of western South Africa and Namibia, only parts of coastal and northeastern South Africa and southern Mozambique failed to receive normal rainfall. In addition, these two sections have become unusually dry since the start of 1988.

